AMERICAN DYESTUFF REPORTER

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"COAL TO DYESTUFF"

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

Vol. 6 New York, June 28, 1920 No. 26

GERMAN DYE OFFERINGS

Textile Alliance Publishes List of Colors Available and Conditions Governing Purchase Under License

PLENTY of interesting news there is for followers of the dye situation this week, but nothing which transcends in importance the official announcement, at last made, of the German dyes now available for importation into the United States through the Textile Alliance as a result of international governmental arrangement.

Full details of the offerings are given in Bulletin 37 issued by the Alliance under authorization by the War Trade Board. This bulletin, which was mailed to consumers late Friday, June 18, reached this office after last week's issue of the REPORTER was in the hands of the printer. By the time the present issue reaches its readers the opportunity for ordering from the assortments detailed in the bulletin will have passed, one of the stipulations being that all orders must be cabled to Paris not later than June 30. The Textile Alliance states in its announcement that after that date it will be unable to accept further orders under the present offer, although no reason for the shortness of the period is vouchsafed. For these reasons the list of offerings will not be printed here.

However, it is unlikely that any consumers desiring these dyes failed to be well enough aware of their own individual needs to take advantage of the opportunity. It is expected, rather, that there will not be enough to go around, even though but six months' supply of any color can be ordered by any consumer. The specimen order blank furnished in the bulletin provides a special space for the noting of the minimum amount of any dye acceptable in the event of the aggregate amount of orders exceeding the supply offered, in which case the Textile Alliance will pro rate the amount available.

The prices given in the bulletin are f. o. b. German factory, and the dyes are grouped under their appropriate classifications of direct cotton colors, acid colors, chrome colors, basic colors, alizarine colors, sulphur colors, vat colors, developers and special products, offered by the following components

of the "ring": Farbenfabriken vorm. Friedr. Bayer & Co.; Leopold Cassella Co., G. m.b.h.; Badische Anilin & Soda-Fabrik; Farbwerke vorm. Meister, Lucius & Bruning; Actien-Gesellschaft fur Aniline-Fabrikation; Kalle & Co.; Chemische Fabrik Griesheim-Elektron, and Chemische Fabriken vorm. Weilerter-Meer.

In addition to the prices, which are quoted per pound rate in original containers, the Textile Alliance provided opposite each quotation the serial number of the dye, for convenience in ordering; the approximate number of pounds available, and an estimate of the charges per pound for freight, royalty, insurance and duty, which was required to be included in the price. Any deviation from these estimates, above or below, was for the account of the purchaser, it was stated.

The prices per pound of the various colors range all the way from Betanaptylamin Gemahlen, a special product of Meister, Lucius & Bruning, at 14 cents, plus $1.36 per pound for incidental charges to get it here, up to Rhodamine 6 G N Extra and Rhodamine 6 G D N Extra, offered by Badische at $23.99 per pound each, plus $1.01 per pound for freight, insurance, royalty and duty. The color subject to the highest incidental charges as set forth above appeared to be Badische's Indanthrene Rose B S Powder, selling at $21.19 plus $3.81.

None of these extra charges find their way to the Textile Alliance, which is legally incapable of making or retaining a profit on any transactions. The dyes offered were sold "without guarantee," but upon the representation of the German Government that they are of standard quality. Consumers were required to declare to the satisfaction of the War Trade Board that the order given in each case was only sufficient for six months' requirements of the purchaser, whereupon a license to import could be obtained from the Board by the Textile Alliance.

The bulletin notified consumers that if any dye proved to be defective at the time of shipment from the factory and not as a result of damage en route, the Textile Alliance is entitled to be relieved from payment of the purchase price, in which event the purchaser will likewise be relieved, although insurance, transportation charges and duty, it was stated, may not be recoverable. In order to insure absolute fairness in this matter, notification was given that consumers ordering dyes in original packages may, upon request made before the dyes arrive, have their dyes held in bond and obtain samples for testing before withdrawal. Dyes so held, however, will be subject to delay and additional expense. In the case of dyes ordered in smaller quantities than furnished in the original containers, an extra charge over and above those already mentioned will be made. Such charges will cover actual expenses only.

The stipulation providing for six months' supply means six months after the order is delivered, and the bulletin is authority for the statement that shipments are now arriving from eighteen to forty days after they leave the factory.

The status of the Textile Alliance in all transactions is practically that of complete detachment save in the mechanical details of ordering, obtaining licenses and generally looking after the interests of purchasers. It acts as go-between, places orders, but assumes no responsibility for failure to live up to specifications and makes no profit. The estimated charges for freight, royalty, insurance and duty are for the convenience of consumers, who are required to forward full payment for their orders by cash, by approved bankers' guarantees corresponding in form to a specimen blank furnished by the Alliance, or by an irrevocable letter of credit established by an approved bank or trust company. Each purchaser, when placing his order, was required to indemnify and hold harmless the Textile Alliance, its officers, agents and employees, individually and collectively, from all liability arising or which may arise from or in connection with their orders, or resulting therefrom. Nothing is added to the quoted price per

pound of each dye but the *actual cost* of freight, insurance, duty and royalty, if any.

That puts the whole series of transactions squarely up to American consumers and the German dye manufacturers, with referees in the United States Government and the German Government—if any!

The Textile Alliance, Inc.—to give it its full title—was organized February 24, 1914, as a membership corporation under the laws of New York, and has no capital stock. Its affairs are under the general supervision of an executive committee consisting of H. D. Cooper, Arthur E. Gill and A. M. Patterson.

The committee having charge of all matters relating particularly to dyes and chemicals consist of Henry B. Thompson, chairman; Robert T. Baldwin, Frank D. Cheny, Dr. Charles H. Herty, Franklin W. Hobbs, August Merz, M. R. Poucher and Louis B. Tim. A subcommittee of the above consists of Mr. Cheney, Andrew C. Imbrie, Manton B. Metcalf and Mr. Tim.

The significance of the offering lies principally in the fact that were it not for the present restrictions maintained by still-existing war legislation, American manufacturers might now be saying to one another, "Meet me at the poorhouse," or words of similar import. As it is, those who have been objecting to the licensing feature of the dye bill may now have the privilege of observing how licensing, carried on by an organized body, will work out. The provision for placing imported dyes in bond is particularly happy, and should be incorporated with whatever legislation Congress finally enacts.

The following officers have been elected to assume control of the Baltimore Paint and Color Works, which was recently incorporated under the laws of Maryland with a capital of $150,000. Morris Shuger, president; George W. Gorsuch, secretary-treasurer, and E. W. Parlet, manager.

DYE INDUSTRY VITAL TO AMERICA

Professor Gerald L. Wendt Tells Federation of Women's Clubs the Need for Dye Factories in the United States

Dyes, as Vital to the Success of America, was the theme of an address by Professor Gerald L. Wendt, of the University of Chicago, delivered at Des Moines, Iowa, last week before the "Made in America" conference of the General Federation of Women's Clubs.

Captain Wendt, a member of the American Chemical Society, was in the Chemical Warfare Service during the war, and was therefore in close touch with the problems with which the chemist had to deal.

After telling of the great needs of men and materials, he laid especial stress upon the financial and legislative aspects of the question.

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Alizarine Chrome Red
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Danville, Va.
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"America," he said, "from the financial point of view, needed education and still needs it. Of the 5,369 active corporations in Germany in 1912, almost seventeen per cent were engaged in chemical industry. At the head of the list of these income-producing powers were the dye companies, which earned at that time an average of 21.74 per cent on their invested capital annually. The close interest of the financial world was shown by the immediate effect on the Berlin stock exchange of new discoveries made in the research laboratories of the dye works and even of the universities. No such condition existed here. The great difficulty was the necessity of complex interlacing and interlocking of the chemical industries. For even a few dyes a large number of the crudes and intermediates are required, and no one firm can economically produce all the chemicals it requires. The challenge was thus a vast one, but it has been bravely met. Tariff and patent conditions had contributed to our lack of preparation. In 1882 we actually had a flourishing young dyestuff industry, but the reduction of the protection in the tariff act of 1883 forced most of the plants to close, and since then textile manufacturers have steadily opposed any effective tariff protection.

"But under the stimulus of war and the national necessity the capital invested in the chemical industries of this country grew by leaps and bounds—66 millions in 1915, 99 in 1916, 146 in 1917, 73 in 1918, 112 in 1919, and 66 millions in the first four months of the present year. And to-day chemists are as vital on the boards of directors of a large financial institution as engineers have long been. And so to-day America possesses a complete dye industry. The quality of these dyes is every bit as high as those formerly obtained from across the sea. True, only about 220 of the previous 900 dyes are as yet being made here, but the range of color, the brilliancy of color, and the fastness to weather and to wear are as good as and often better than in the former German products. Already by 1917 our production was 46 million pounds annually—more than the previous importation. There is thus no magic in the German ability. We have accomplished the miracle ourselves. It is all a matter of plain every-day chemistry, of raw materials and of finance. There is no reason why we should not stand alone for years to come.

"Only two points need further attention. One is scientific education. Our waster of resources, such as the one-time burning of $75,000,000 of tar annually in the beehive coke ovens, can be eliminated only by a wide realization of the possibilities of scientific development together with a constant supply of trained men working in research laboratories. Our schools have still a real task before them in providing fundamental scientific education to all our people and our universities in particular must not fail in their duty of providing trained men in investigation and creative work. The day of the bachelor's degree is passing; no man is trained in science nowadays without three or four years of training in true research spirit and method after he has finished his general college education.

"And lastly I touch on the one remaining vital point in determining the future of this great industry which is so necessary to our national life and our security. And that is the one weakness of our present situation. We are competing with a ruthless enemy who has in the past not hesitated to use the utmost means, fair or foul to kill off an American dyestuff industry—not because it meant dyestuffs, but because it meant explosives and real preparedness. Incipient dye plants were at once met with a reduction of German prices to far below cost price, even in spite of all tariffs, until the American compe-

titor was forced out of business when former monopoly prices were re-established. And this will happen again. In spite of our real achievement in the creating of this many million dollar industry, the amount of capital required in its establishment from nothing does not yet permit us to make these dyes at German prewar prices. And even were this possible, German methods of business would soon make short work of this real defense of our land. A tariff will not answer. I do not speak for the dye industry, with which I am in no way connected, but as an American and as a member of the American Chemical Society, which realizes the strategic position of the coal tar industries and welcomes such action as that taken by ninety-seven users of dyestuffs, textile and other firms, not one of them producers of dyes, who cabled to President Wilson at Paris an urgent appeal for the protection of the American dye industry by tariff and by a licensing system, and the cabled message of President Wilson to the Congress convened in special session which read in part as follows:

"'Among the industries to which special consideration should be given is that of the manufacture of dyestuffs and related chemicals. Our complete dependence on German supplies before the war made the interruption of trade a cause of exceptional economic disturbance. The close relation between the manufacturer of dyestuffs on the one hand and of explosives and poisonous gases on the other, moreover, has given the industry an exceptional significance and and value.'

"The U. S. Tariff Commission has studied the problem, and its recommendations are incorporated in the Longworth Bill (H. R. 8078), still before Congress, which provides for an effective tariff reinforced by a license system whereby dyes not manufactured in this country can be imported, but dyes which we do make can be obtained only by license for a period of years. Only by such a system can the stability of our new industry be assured.

"And only with a well developed organic chemical industry, based on the dyes, can we be secure in a military or a medical sense. A million men springing to arms overnight are inspiring, but provide only hopeless murder without high explosives and poison gas. Universal military training has advantages and serious dangers, but it is useless without a supply of the materials of war. Fundamental preparedness, which can do no possible harm in time of peace, but will amplify and enrich our national life, depends on the flourishing existence of large bodies of trained scientists working in such critical industries as this one which we have now established at great cost, and whose importance I have to-day certainly not overemphasized."

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

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"NONE SO BLIND—"

In the normal course of events, would it be entirely natural for a young man who has been born heir, let us say, to several millions of dollars, and brought up by indulgent parents who have given him to understand clearly that the world was his Bluepoint and that there was "plenty more where that came from"—would it be natural for this young man to haggle over a few pennies? He would consider it several wide and yawning degrees beneath him; and even later in life, if he had met with no reverses and had been enticed into no particularly unfortunate speculations, it would be most unusual to find him choosing his investments with quite the same hungry attention to detail that is characteristic of the man who has built a fortune by slow effort with no assets but a brain and a pair of hands.

Caution and penetration have simply become second nature to the latter; he exercises these faculties almost automatically, whereas the other, even if he has inherited them along with his truckload of first liens and six per cent preferreds, soon allows them to grow rusty and dull unless taught to know their importance. It is not unnatural that this should be so. Cases of exceptional business ability—and, more important, real love of the business game—being passed on from father to son are fairly frequently met with; all the same, their percentage looks pretty sallow and pasty alongside of the other kind, and when they do occur it is usually because the father insisted on an early training in estimating the number of monetary units in a dollar, pound, franc, ruble or mark.

The United States to-day is more than a little in the position of the wealthy and gilded youth—in which there is plenty of good stuff—whose Uncle Samuel has left him a fortune ample to let him travel around with the other boys in his set, satisfied to buy when his turn comes and generally keep his end up without worrying about whether his own descendants will likewise be able to maintain themselves on this footing.

That we are capable of assuming the lead so easily under the pressure of great necessity shows how inadequately we cultivate our natural wealth the rest of the time. We have always had so much to draw upon that what we have wasted never has been missed. We sometimes forget, as a nation, that the set we are satisfied merely to keep pace with achieves its pace by the practice of many apparently petty economies and much foresight. They have simply reached a point where they have to, while we have not.

When one stops to reflect that this nation could feed its entire population, including opposers of the Dye bill, with the food products which could be obtained from the State of Texas alone—that is, Texas under scientific and economical cultivation—it reveals only too clearly the position which our gilded youth could take among his fellows if he chose.

Now, it is, of course, hopeless to expect him to go the limit quite yet—he'll have to mature a little more before that time arrives—but the reason he has never realized anything like his full possibilities is because his guardians, once he began to affect long trousers and take an interest in the white lights, have in the main been miraculously endowed by nature with a wonderfully perfect vacuum in that phrenological region commonly set aside in man for the national pride and ambitious convolutions.

There are plenty of builders in the land who realize full well what we

shall do when our government is again composed of other true builders instead of expert legislation jockeys—if it ever is—of men whose majority consists of fearless thinkers and whose foresight and ability for teamwork approach somewhere near the foresight and teamwork possessed by the founders of this nation. They realize full well what Europe achieves with less in the way of resources, and that even working with 100 per cent efficiency the process of achievement is so painfully slow that men may spend their entire lives in an effort to build without seeing an advancement very great compared with the total distance to be traversed. Only the superficial thinkers believe that we have accomplished wonders, because they invariably figure on the basis of a generation or two, instead of a nation's lifetime.

Because he is a true builder, gifted with a foresight which does not end with the present decade—or even century—and because he has successfully demonstrated his building principles, what John T. Queeny, Chairman of the Board of the Monsanto Chemical Works, has to say regarding our wasted opportunities ought to be distinctly worth listening to. In a letter to this publication, in which he refers to a recent article, he states:

"This article indicates that the writer of it . . . realizes what we have actually accomplished during the past five years, and what we could have accomplished ten or fifteen years ago if Congress had given the chemical industry in this country the protection which the World War has given us. *There is nothing the Germans did in their forty years but what the manufacturers in this country can do in less than one-fourth of that time.*"

While those whose duty it is to see that our nation has at least an equal chance with other nations have been splitting legal hairs and bargaining with one another for the passage of measures designed to further personal

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popularity above all things, Mr. Queeny has been hard at work in a chemical plant. Hence he realizes the truth of his statement, and other big manufacturers realize it also. But the men to whom they must look for co-operation for the ultimate benefit of all of us have been too busy to educate themselves on such trifling subjects as the sources of this nation's future power. They are, willfully or otherwise, too blind to see that unusual protection for certain lines is the first step toward United States leadership. They are unable to see that, granted a start, our manufacturers will do the rest and place us where we belong.

Mr. Queeny further writes:

"Even now Congress hesitates to give needed protection for further development. It seems that the last five years has not been a sufficient lesson, we regret to say."

There's the rub! The signs have been so plain that a child could understand them. More than mere understanding, however, is expected from grown men, supposed to further the interests of this nation in every honorable way; action along the lines indicated by that understanding is demanded. And the present delay of eighteen months does not cover the legislative shortcomings of our government.

"None so blind as those that will not see!" wrote Mathew Henry during the latter part of the seventeenth century. That is why, Mr. Queeny, the lesson has not been sufficient. And unless some sort of a lesson in attention to the real business of Congress can be driven home, we are inevitably going to fall behind as a nation. The time has come when we must begin to look after our inheritance a little.

Announcement has been made by the Butterworth-Judson Corporation, Doremus Avenue, Newark, N. J., that the company will erect a new one-story building at its chemical plant, 47 x 84 feet. The cost of the structure will be in the neighborhood of $15,000.

VELVET FINISH ON FANCY CASSIMERES

This finish depends considerably upon the fulling mill to give the fabric the felt necessary which afterwards, by means of suitable gigging, napping and brushing, is transformed into the soft velvety-feeling nap. A dense nap is required, and to ensure this, the felt must be reasonably close and perfect, as it is from the felted surface of the structure that the nap must be raised, and not from the threads, since otherwise a tender fabric will be the result. The amount of the felt produced depends, as we might say, entirely upon the quality of the wool used in the construction of the fabric; for which reason the perfect final finish depends upon the careful selection of the stock, although to a certain extent the weave and the twist of the yarn must be carefully taken into consideration.

Shoddy May Be Used

A long-stapled wool should never be used, from the fact that it is the protruding ends from the warp and weft, as used in construction of the fabric, which must produce the characteristic nap on the fabric, and the more of these protruding ends there are in the yarn the thicker the nap possible to be raised from it. It is for this reason that the use of shoddy, if carefully selected, will be permissible, provided the best grade possible to procure is used, since such actually may help towards producing a density of nap, if the life and felting quality of the shoddy are not impaired. However, it must be strictly understood that we refer only to an all-wool shoddy —live fibers—not to shoddy produced from rag-stock previously fulled (i. e., mungo), or possibly such as contains a percentage of cotton, and, if used, will give a less satisfactory result, since the cotton fibers, having no felting quality, will give less body to the fabric structure for the gig in turn to work upon.

If the fabric structure under operation will permit it shrinking slightly in length during the process of fulling this

will be of great help in producing the required result. After the proper fulling the structure is obtained, cleanliness and freedom from all trace of soap are necessary, remembering that the use of Fuller's earth at the final raising should never be omitted, for this will impart to the goods a certain soft and silky feeling which cannot be obtained in any other way. When this part of the work has been satisfactorily performed, and the goods are ready to come out of the washer, the goods are taken at once to the rolling and stretching machine and rolled tight and smooth.

After leaving them on rolls overnight, they then are in the best possible condition for the gig, free from creases or wrinkles, and just about right as to moisture. Provided the fabric reaches the gig in too dry a state, then during the process of gigging some of the fibers will be torn by the teasels out of the fabric structure, and be washed in gig-flocks, instead of contributing to the perfection of the nap. Besides this, there will be a danger of the teasels cutting the threads, whereas a proper moisture serves to protect them.

Method of Gigging

Upon the proper gigging depends the entire success of this velvet finish, provided the proper selection of stock, weave, fulling and scouring has been properly attended to. In starting the gigging, old worn teasels must be used, rapidly increasing to sharper work, and this with frequent reversing. The change in the sets of teasels used is selected in such a way that they will pick up the fibers from the felt easily—i. e., so that we are not compelled to apply the cloth hard to the teasels, thereby causing them to drag forcibly, and in turn lay the nap. For this reason teasels sufficiently sharp must be used, so that they will raise the nap by a moderate fabric contact only. The cloth is applied lightly to the teasels to get this velvet nap, changing the work as soon as the teasels fill up with flocks, for it must be remembered that the finish desired is a standing nap in the order of a plush, in place of laying the nap, as required in connection with fabrics like beavers; a feature prevented by the frequent reversing of the goods or of the motion of the cylinder of the gig, as the case may be. If two-cylinder gigs are used, the cylinder are run in opposite directions.

To determine when the goods are sufficiently gigged, the felt on the face of the cloth must have been raised so that the threads and patterns will show up clearly when the nap is parted or cut away. The latter half of the gigging process must be done more moist than is usually the case in connection with other finishes, and therefore the goods must be evenly and generously sprinkled.

No work must be done after turning the fabric the last time, except to barely turn the nap, finishing the clearing up, and thus the process of gigging proper, before the cloth is thus turned the last time. If dealing with a napping ma-

America's Standard

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chine in place of a gig, then the first run on this machine must be given reversed, and subsequent runs the right way. The workers of the napper must be run at their highest speed, and after the goods have had two runs, the cloth is brought in contact with the worker as far as can be done safely, and the sprinkling can be used without stint. Two runs thus given should leave the goods in good condition.

After the gigging or napping is completed, the goods are taken to a brush gig, which practically is a wet gig with all its appointments as to water supply, whereas its cylinder is clothed with wood-fiber brushes. The pieces are here given at least four runs with lots of water, and then rolled up again on the gig and left again until next morning, when they are folded off and extracted for the dryer, which should be speeded sufficiently slow to do the work without stopping. In the latter instance the pressure and heat of the rolls are liable to mark the goods, by the nap being pressed down and thus set, and when afterwards the brushes of the shear cannot raise the nap on such places of the fabric properly, for the shear blades afterwards to trim the nap uniformly at such points.

The Final Raise

After drying, and before shearing, the cloth should be given a few runs upon an up-and-down gig, and this with fairly good teasels, a process which will give to the nap a lofty effect by lifting and thus softening it up, correcting at the same time any tendency of the nap to lie in the wrong direction by the slight work given it on the last turn of the wet gigging.

In place of this dry gigging, some finishers prefer the brush, using in connection with this procedure a little steam, which will loosen all the fibers and assist the brushes on the shear to do their part of the work more effectually. During this shearing care must be exercised to get the nap of the goods even and also not too low, for while the goods are to show the pattern plainly, they at the same time must have a nap left on them to give them the soft velvety feeling. The goods must not be stinted in the number of runs. The raising brush on the shear should not be set too hard, or the result will be to turn the nap back too far, instead of causing it to stand so that the shear blades can do their work properly; again, the back or laying brush must be clear, and well applied, so as thoroughly to lay the nap at each run.

If specking is necessary, it should be done at this stage, giving the goods again a brushing before they are inspected, after which they are again steam brushed, and in turn are then ready for the press. They are pressed with the face to the bed as hard as possible, and are then given a steam brushing. The amount of steam used should be very light, and the brushes also should not be on too hard. The number of runs to be given here depends upon the conditions o fthe pieces as required in the market. The goods then present sufficient smoothness so that we can easily distinguish the way the nap was finished; the fabric will be free from any harshness in handle, present a most beautiful face, and at the same time be up to strength in its structure. —*Posselt's Textile Journal.*

USE OF CIBUCAO WOOD FOR DYE IN HONGKONG

The business of the import of "cibucao" wood from the Philippines and its manufacture into a stain or dye in Hongkong is in the control of a close combination of five Chinese firms in Hongkong, of which Yuet Loong Chan & Co., Hongkong, is the principal. The wood, called "Soo Mook" in Chinese, comes almost exclusively from Iloilo and vicinity in the Philippines. It is a red, fairly soft wood, and is cut and cured in short lengths and imported in bundless. It is bought and sold by the picul (133 1/3 pounds), its price in Hongkong at the present time being about $2.10 local currency or substantially the same in gold, per

picul. The stain or dye manufactured from the wood is a red ink or paste used largely by the Chinese for inking the small "chops" or seals employed by them as the means of affixing their signatures to written instruments of a formal nature.

The color in the wood is extracted and used variously by the Chinese as an ink, a stain, dye, and paint color. The wood is boiled and the resulting water solution is further boiled down to a sirup-like consistency. Whiting is then mixed with it for most purposes, the resulting paste being the preparation used as an ink for the native "chops." As a dye the stain is used for coloring cheap Chinese papers, notably the paper used in the manufacture of fire crackers, ceremonial papers of various sorts, and for the very cheapest sort of Chinese stationery. The whiting concentrate also is used as an adulterant for European red paints. The color liquor also is used at times for mixing with better quality of red dyes for coloring native cloths.

The whole process of extracting the dye is crude and wasteful, but the business is closely controlled by this syndicate, which is strong enough to regulate the volume of the manufacture and the price of the product. It is doubtful, therefore, whether it would be practicable to transfer the industry to the Philippines and have the dye or stain manufactured there for sale in China, although apparently there would be a considerable saving in freight and other expenses by so doing.

THE MANUFACTURE OF LAKES

By Arthur A. Rauchfuss
(Calco Chemical Company)

The quantity of dyestuffs used for the lake trade is very large. This is due in part to be greater quantity of dyestuff required to make a pound of finished lake in comparison with the amount used in the textile industry to obtain a deep shade.

The purpose of this article is to give a brief resume of the lake manufacturing industry, without going deeply into technical details.

The lake pigments are formed in four different ways, namely:

1. By absorption;

2. By precipitating the color on a base;

3. By precipitation resulting from the combination of suitable acid and basic dyestuffs;

4. By the "development" of colors, which takes place in the course of precipitation.

The precipitating agents may be classed as follows:

(a) Barium chloride, for all acid and most of the direct cotton colors;

(b) Tannic acid and tartar emetic, for basic colors;

(c) Lead salts, for such dyes as eosines, etc.

Instead of using the barium salts, calcium or strontium salts may be used in some cases to give bluer shades.

Bases.—The bases on which the

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colors are precipitated vary according to the results desired.

Aluminum hydrate is used alone when very bright and transparent colors are desired. It grinds well, and is used especially when one color is printed over another.

Blanc fixe (precipitated barium sulphate) has great covering qualities, though it does not work well alone when used in printing inks. Combinations of aluminum hydrate and blanc fixe are therefore used quite extensively, as the hydrate increases the working qualities of the blanc fixe. In this way widely different results can be obtained.

Aluminum hydrate and blanc fixe, and combinations of the two, are generally the only bases used in colors made for printing and lithographic inks. These colors can then be changed when ready for the press by adding lithopone, zinc white, or magnesia, which have been ground in linseed oil varnish.

When lakes are made up, their future use must always be considered. This applies both to the character of the dyestuff as well as to the base. They may therefore be divided into the following classes:

1. Lithographic and printing inks;
2. Paint colors:
3. Wall paper and colors for the paper industry;
4. Lime colors.

The colors for lithographic and printing inks must be made very soft, so that they will grind up very fine in the linseed oil varnish. As a general rule, they should be fast to light, and for lithographic purposes should not bleed in water.

Paint or oil colors should be made so that they shall have maximum covering qualities and good fastness to light, and shall not bleed in oil.

Colors for use in the paper industry are generally made on bases of satin white, blanc fixe or China clay, the last two being the ones most used.

Lime colors must be fast to the action of lime, and must mix readily with water. They are generally used for painting cement work of various kinds.

A description of the manufacture of a purple lake may serve as an illustration of the processes required to put a dyestuff in proper condition for use on a printing press. This will give an idea of the number of operations and the amount of handling necessary before the lake can be used.

A base is made of aluminum hydrate by the addition of a solution of sodium carbonate (commonly called soda ash) to a solution of aluminum sulphate (alum). The white precipitate formed is allowed to settle to the bottom of the tank and the water on top is then drawn off. This operation is called "washing." After the base has been sufficiently washed, a solution of methyl violet is added to it. The mixture is then thoroughly stirred and the dyestuff precipitated on the hydrate by the addition of solutions of tannic acid and tartar emetic. The color is then washed several times to remove all excess of the chemicals formed, and pumped into a press. The color is now in a hard cake containing about 50 per cent water. The cakes are put on trays and placed in the drier, where a warm current of air soon drives all the water off. Care must be taken not to attempt to dry too fast, as the color will then be hard. The lumps of color are then pulverized, and the resulting fine powder is mixed with the necessary amount of linseed oil varnish and put on a roller mill. This mill has three rollers that have a crushing as well as a grinding action, and the color is run through until no signs of any coarse particles can be detected by putting a thin layer of the ink on a glass plate. When this point has been reached the color is ready for the press.—*M. O. H. Bulletin.*

Announcement has been made by the United Color & Pigment Company, Newark, N. J., that the company's Pacific coast representatives are the L. H. Butcher Company, with offices at 341 Montgomery Street, San Francisco; 1906 L. C. Smith Building, Seattle, and 461 Pacific Electric Building, Los Angeles.

Dye-a-Grams

Congressional ability for "fixing" may have something to do with the number of enemies the dye bill has.

—o—

Senator Thomas said: "I cannot conceive of a more cold-blooded proposition." His success causes us to voice these sentiments, absolutely!

—o—

We may console ourselves with the fact that a lot of other "things" may be "shelved" ere the next session of Congress.

—o—

Shipping American dyes by truck is to be preferred to shipping truck from Germany.

—o—

The Editor claims that "Senator Thomas painted a highly affecting picture." And we bet he could paint a German propagandist to look like a Puritan.

—o—

The German debt to the world has been estimated at one thousand million marks! How many marks is St. Peter holding against them?

—o—

If the German dye supply is a mere phantom, why not put the dye bill into effect and make it an assured fact?

—o—

When a man is willing to buy German dyes "at any figure" he must want to find an outlet for excess profits!

G. E. T.

To manufacture textile fabrics, Jednos, Inc., has been incorporated under the laws of New Jersey with a capital of $150,000. Headquarters of the new enterprise will be at Dover.

CHLORINATED WOOL

Garment dyers are sometimes at a loss to understand why a wool garment dyes unevenly. This may be due, explains Herbert P. Pearson in the *Journal of the Society of Dyers and Colorists*, to the fact that some of the wool was treated with chlorine during the process of manufacture to prevent shrinkage and felting.

"The most remarkable chemical property of chlorinated wool," the author says, "is its action on dyestuffs. If untreated wool and chlorinated wool be dyed together in the same bath with a direct dye, the latter becomes much more deeply dyed than the former." The author gives no explanation for this fact.

Mr. Pearson also discovered during his investigations that "when dry chlorinated and dry unchlorinated wool are rubbed together a charge of electricity sufficient to violently disturb the gold leaves of an electroscope are generated on each, whereas two pieces of ordinary wool, even of different class, give rise to no charge.

"To distinguish chlorinated from unchlorinated wool the two simplest tests are physical in character. If a single drop of water be placed on a piece of chlorinated fabric, it is absorbed fairly quickly and the wet-out place has a circular contour, while in the case of ordinary wool the drop is absorbed very slowly and the contour of the wet-out place is irregular. Further, on wetting out chlorinated wool and rubbing together two surfaces of it between the finger and thumb, a very characteristic 'scroop' is felt. After a little experience these two tests are sufficient, though they may be supplemented by

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two others. The first depends on the dyeing properties of chlorinated wool already mentioned, comparative dyeings with untreated wool showing an unmistakable difference. The second is based on the phenomenon that dry chlorinated and dry untreated wool when rubbed together produce a charge of electricity on each.

"The treatment with chlorine of wool fabrics intended for garments that have to be washed has one very grave defect, and that is the tendency—I might say certainty—of the garment to wear badly. They tend to wear into holes at the elbows and knees and other places exposed to hard treatment. It is not merely a case of the rotting of the fiber, for under certain conditions the treatment actually increases its tensile strength. The cause, most probably, is simply that the treatment with chlorine removes the felting property of the wool. The fibers of the ordinary wool become felted together more and more with each successive washing, thus increasing the strength of the fabric. In the case of chlorinated garments this felting does not take place. On the contrary the mechanical action of wearing and washing tends to loosen the fibers one from another until they eventually come apart entirely."

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NOTES OF THE TRADE

Announcement has been made to the trade to the effect that the Hanrick Mills, of Gaffney, S. C., have increased the capital of this organization from $250,000 to $500,000.

To act as chemists, druggists, etc., D. Himadi, Inc., has been incorporated under the laws of New Jersey. Headquarters will be located at Lodi, that State. The capital is $125,000.

Announcement has been made that the name of the Thomasville Hosiery Mills, of Thomasville, N. C., has been changed to New London Hosiery Mills. The capital stock of the company operating the mills has been increased from $15,000 to $50,000.

Manufacturers of Charleston, W. Va., and Saginaw, Mich., comprise the elements of the Nitro Products Corporation, recently incorporated to establish a large factory at Nitro, W. Va. The capital tsock of the new concern is placed at $500,000, and the officers include J. P. Pitcher, of Saginaw, and C. P. Miller, of Charleston.

Hemingway & Company, the manufacturers of chemicals and colors, Bound Brook, N. J., are planning the erection of a series of three and four-story additional buildings at the plant. Cost of the improvements will be in the neighborhood of $125,000.

BROWN & WIGLE CO. BECOME BROWN WOOLEN MILLS, LTD.

Announcement has been made by the Brown & Wigle Company, Kingsville, Ontario, to the effect this firm have taken out a new charter and have been incorporated under the firm name of The Brown Woolen Mills, Ltd. The capital of the new organization is $150,000.

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